

CLAIMS:

1. A cutting tool holder, comprising:
at least one insert pocket in the tool holder; and
5 at least one antirotation stop corresponding to at least one said insert pocket, wherein the antirotation stop comprises at least two substantially planar surfaces.
2. The cutting tool holder of claim 1, wherein the antirotation stop comprises three substantially planar surfaces.
- 10 3. The cutting tool holder of claim 2, wherein the pocket further comprises a bottom surface and the three substantially planar surfaces are substantially perpendicular to the bottom surface.
4. The cutting tool holder of claim 3, wherein the antirotation stop is integral to the bottom surface and a side surface of the insert pocket.
- 15 5. The cutting tool holder of claim 1, wherein each of the insert pockets comprises a side wall for engaging an insert.
6. The cutting tool holder of claim 1, comprising one to two antirotation stops.
7. The cutting tool holder of claim 1, wherein the antirotation stop indexes a cutting insert.
- 20 8. The cutting tool holder of claim 1, comprising one to twenty insert pockets.
9. The cutting tool holder of claim 1, wherein the antirotation stop protrudes from a side wall of the pocket.
10. The cutting tool holder of claim 9, further comprising at least one cutting insert.
- 25 11. The cutting tool holder of claim 10, wherein each cutting insert is secured in the pocket.
12. The cutting tool holder of claim 11, wherein each cutting insert comprises at least one recess and the antirotation stop protrudes into one of the at least one recess.
- 30 13. The cutting tool holder of claim 12, wherein the recess is partially defined by a portion of a sphere.

14. The cutting tool holder of claim 12, wherein the shape of the antirotation stop and the recess are non-complementary.
15. The cutting tool holder of claim 14, wherein the insert is a round shaped insert.
- 5 16. The cutting tool holder of claim 1, wherein the insert is a round shaped insert.
17. A cutting tool holder, comprising:
at least one insert pocket in the tool holder;
at least one antirotation stop protruding from at least one of a side
10 wall and the bottom surface of the insert pocket, wherein the antirotation stop comprises at least two substantially planar surfaces.
18. The cutting tool of claim 17, further comprising:
a cutting insert, wherein the cutting insert comprises a recess having
15 a shape that is non-complementary to the shape of the antirotation stop and at least one of tungsten based carbide or cermet.
19. The cutting tool of claim 18, wherein the cutting insert is a round shaped insert.
- 20 20. The cutting tool holder of claim 19, wherein the antirotation stop comprises three substantially planar surfaces.
21. The cutting tool holder of claim 20, wherein the pocket further comprises a bottom surface and the three substantially planar surfaces are substantially perpendicular to the bottom surface.
- 25 22. The cutting tool holder of claim 19, wherein the antirotation stop is integral to the bottom surface and a side surface of the insert pocket.
23. The cutting tool holder of claim 22, wherein the side wall engages the insert.
24. The cutting tool holder of claim 19, comprising one to two antirotation
30 stops.
25. The cutting tool holder of claim 19, wherein the antirotation stop indexes a cutting insert.

26. The cutting tool holder of claim 25, comprising one to twenty insert pockets.
27. The cutting tool holder of claim 26, wherein the recess is partially defined by a portion of a sphere.
28. The cutting tool holder of claim 19, wherein the antirotation stop protrudes
5 form the side wall of the pocket and that recess is in a side wall of the cutting insert.
29. The cutting tool holder of claim 19, wherein the antirotation stop protrudes
form the bottom surface of the pocket and that recess is in a bottom
10 surface of the cutting insert.

30. A cutting insert, comprising:
a top surface comprising a cutting edge;
a bottom surface;
a circular side wall between the top surface and the bottom surface;
5 and
a recess in at least one of the bottom surface and the circular side wall, wherein the recess at least partially defined by a portion of a sphere.
31. The cutting insert of claim 30, wherein the recess is partially defined by a
10 cylindrical shape.
32. A method of making a tool holder, comprising:
tangentially milling at least one antirotation stop and an insert pocket
in the tool holder, wherein the antirotation stop comprises at least two
substantially planar surfaces.
- 15 33. The method of claim 20, further comprising:
tangentially milling a top surface of the pocket with a ball mill.